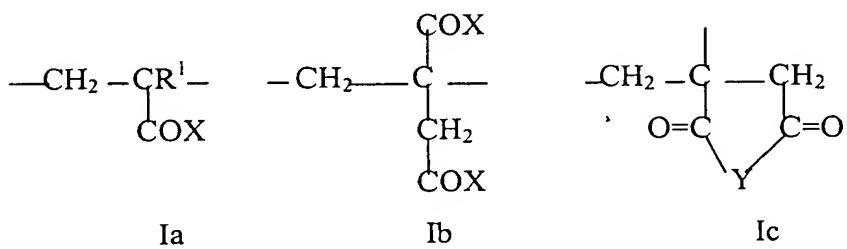


AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

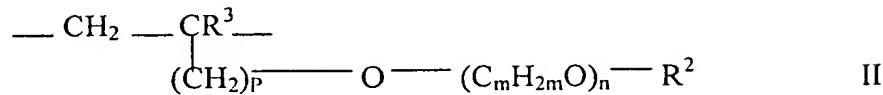
1. (Currently Amended) A fluidising admixture for use with sprayable cementitious compositions, the admixture consisting of:

- (1) 2-phosphonobutane-1,2,4-tricarboxylic acid;
- (2) optionally, citric acid; and
- (3) at least one polymer derived from ethylenically-unsaturated mono- or dicarboxylic acids, and characterised in that the polymer consists of:
 - a) 51-95 mole % of moieties of formula 1a and/or 1b and/or 1c



wherein R^1 = hydrogen or a C_{1-20} aliphatic hydrocarbon residue;
 $X = O_a M$, $-O-(C_m H_{2m}O)_n-R^2$, $-NH-(C_m H_{2m}O)_n-R^2$,
 M = hydrogen, a mono- or divalent metal cation, an ammonium ion or an organic amine residue;
 $a=0.5$ or 1 ;
 R^2 = hydrogen, C_{1-20} aliphatic hydrocarbon, C_{5-8} cycloaliphatic hydrocarbon or optionally substituted C_{6-14} aryl residue;
 $Y=O$, NR^2 ;
 $m=2-4$; and
 $n=0-200$;

b) 1-48.9 mole% of moieties of the general formula II

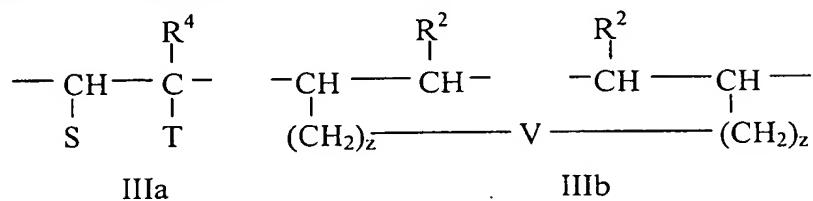


wherein R^3 = hydrogen or $C_{1.5}$ aliphatic hydrocarbon;

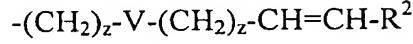
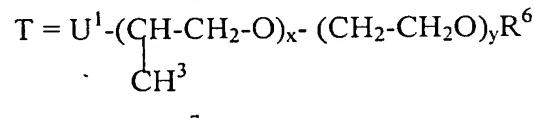
$p = 0-3$; and

R^2 has the meaning given previously;

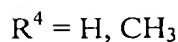
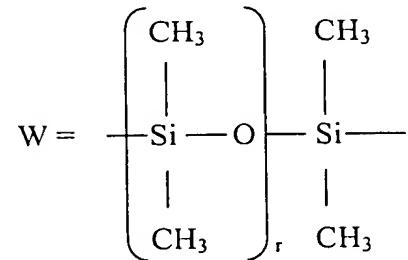
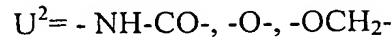
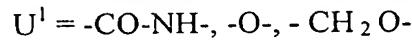
c) 0.1-5 mole % of moieties of Formulae IIIa or IIIb



wherein $S = H, -\text{COO}_a\text{M}, -\text{COOR}^5$



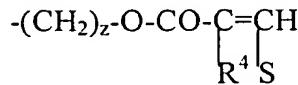
$= -\text{COOR}^5$ when S is $- \text{COOR}^5$ or COO_aM



R^5 = a C_{3-20} aliphatic hydrocarbon residue, a C_5-C_8 cycloaliphatic hydrocarbon residue or a C_{6-14} aryl residue;

$R^6 = R^2, -CH_2-CH-U^2-C=CH$
 $\quad \quad \quad | \quad \quad | \quad |$
 $\quad \quad \quad R^4 \quad R^4 \quad S$

$R^7 = R^2, -[(CH_2)_3-NH]_s-CO-C=CH$
 $\quad \quad \quad | \quad \quad |$
 $\quad \quad \quad R^4 \quad S$



wherein

$r = 2-100$

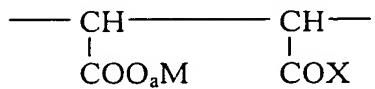
$s = 1, 2$

$z = 0-4$

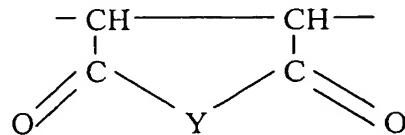
$x = 1-150$

$y = 0-15$; and

d) 0-47.9 mole % of moieties of the general formula IVa and / or IV b:



IVa



IVb

wherein a, M, X and Y have the significances hereinabove defined meanings defined above.

2. (Currently Amended) A fluidising admixture according to claim 1, in which:

a) the moiety is according to formula Ia;

R^1, R^2 are independently H or CH_3 ;

$X = O_a M, -O-(C_m H_{2m}O)_n-R^2$

$M = H$ or a mono- or divalent metal cation;

$a = 1$;

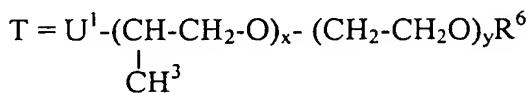
$Y = O, NR^2$;

$m = 2-3$; and

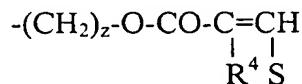
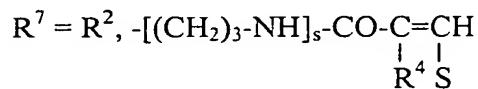
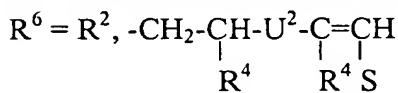
n= 20-150;

b) R^2, R^3 are independently H or CH_3 ; and
 $p = 0\text{--}1$; and

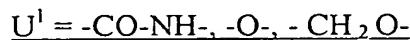
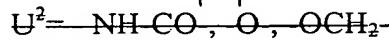
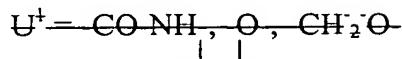
c) the moiety is according to formula IIIa;



R^4, R^5 are independently H, CH_3 ;



wherein



x = 20-50;

$y = 1 - 10$; and

$z = 0.2$.

3. (Currently Amended) A fluidising admixture according to claim 2, in which:

a) the moiety is according to formula Ia;

$$R^1 = H.$$

$$R^2 = CH_3.$$

$$X = Q_0 M \cdot$$

M = a mono- or divalent metal cation:

$$Y \equiv 0 \pmod{N^2}$$

$m = 2$; and

n = 25-50;

b) R², R³ = H; and
 p = 0; and

c) the moiety is according to formula IIIa;

S = H, -COO_aM;

T = U¹-(CH-CH₂-O)_x- (CH₂-CH₂O)_yR⁶
 |
 CH³

-CO-O-(CH₂)_z-W-R⁷

R⁴, R⁵ = H;

R⁶ = R², -CH₂-CH-U²-C=CH
 | |
 R⁴ R⁴ S

R⁷ = R², -[(CH₂)₃-NH]_s-CO-C=CH
 | |
 R⁴ S

-(CH₂)_z-O-CO-C=CH
 | |
 R⁴ S

wherein

U¹ = -CO-NH-;

U² = -NH-CO-, -O-, -OCH₂-

x = 20-50;

y = 5-10; and

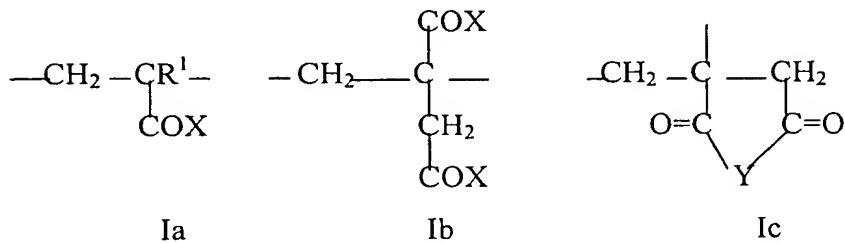
z = 1-2.

4. (Currently Amended) A method of imparting flow to a cementitious composition, comprising the addition thereto of [[an]] the admixture according to any one of claims of claim 1[-3]].

5. (Currently Amended) A method of spraying a cementitious composition comprising [[by]] preparing a cementitious mix and conveying the mix to a spray nozzle, there being added to the mix at preparation [[an]] the admixture according to of claim 1.

6. (New) The admixture of claim 1 wherein the polymer has a weight-average molecular weight of from about 5,000 to about 50,000.

7. (New) The admixture of claim 1 wherein the polymer has a weight-average molecular weight of from about 10,000 to about 40,000.
8. (New) The admixture of claim 1 wherein the proportions of the solids of the three components are:
Component 1 - about 1% to about 40%;
Component 2 - 0 to about 40%; and
Component 3 - about 5% to about 60%.
9. (New) The method of claim 4 wherein the admixture is added at a rate of from about 0.2% to about 2% by weight solids of cement.
10. (New) A fluidising admixture for use with sprayable cementitious compositions, the admixture comprising:
 - (1) 2-phosphonobutane-1,2,4-tricarboxylic acid;
 - (2) optionally, citric acid monohydrate; and
 - (3) at least one polymer derived from ethylenically-unsaturated mono- or dicarboxylic acids, and characterised in that the polymer comprises:
 - a) 51-95 mole % of moieties of formula 1a and/or 1b and/or 1c



wherein R¹ = hydrogen or a C₁₋₂₀ aliphatic hydrocarbon residue;
 X = O_a M, -O-(C_mH_{2m}O)_n-R², -NH-(C_mH_{2m}O)_n-R²,
 M = hydrogen, a mono- or divalent metal cation, an ammonium ion or an
 organic amine residue;

a=0.5 or 1;

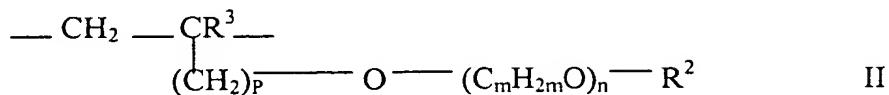
R² = hydrogen, C₁₋₂₀ aliphatic hydrocarbon, C₅₋₈ cycloaliphatic hydrocarbon or optionally substituted C₆₋₁₄ aryl residue;

Y= O, NR²;

m= 2-4; and

n= 0-200;

b) 1-48.9 mole% of moieties of the general formula II

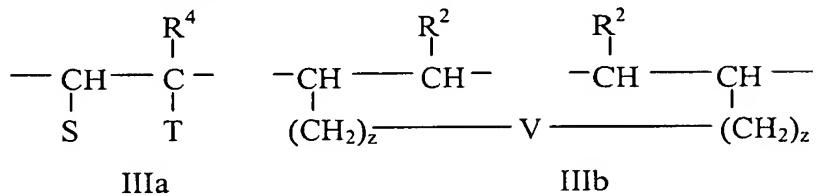


wherein R³ = hydrogen or C₁₋₅ aliphatic hydrocarbon;

p = 0-3; and

R² has the meaning given previously;

c) 0.1-5 mole % of moieties of Formulae IIIa or IIIb



wherein S = H, -COO_aM, - COOR⁵

T = U¹-(CH-CH₂-O)_x-(CH₂-CH₂O)_yR⁶
|
CH³

-W-R⁷

-CO-[NH-(CH₂)₃]_s-W-R⁷

-CO-O-(CH₂)_z-W-R⁷

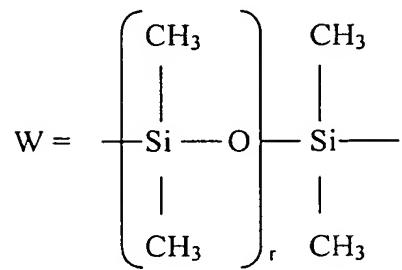
-(CH₂)_z-V-(CH₂)_z-CH=CH-R²

= - COOR⁵ when S is - COOR⁵ or COO_a M

U¹ = -CO-NH-, -O-, -CH₂O-

U² = - NH-CO-, -O-, -OCH₂-

V = -O-CO-C₆H₄-CO-O- or -W-



$R^4 = H, CH_3$

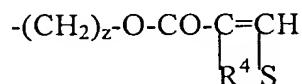
R^5 = a C₃₋₂₀ aliphatic hydrocarbon residue, a C₅-C₈

cycloaliphatic hydrocarbon residue or a C₆-14 aryl residue;

$$R^6 = R^2, -CH_2-CH\begin{array}{c} | \\ R^4 \end{array}-U^2-C=CH\begin{array}{c} | \\ R^4 \end{array}\begin{array}{c} | \\ S \end{array}$$

$$R^7 = R^2, -[(CH_2)_3-NH]_s-CO-C=CH$$

$\begin{matrix} | & | \\ R^4 & S \end{matrix}$



wherein

r = 2-100

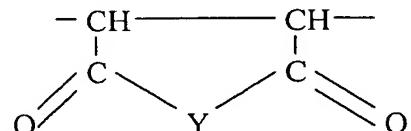
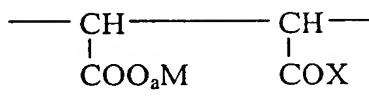
$s = 1, 2$

$z = 0.4$

x = 1-150

y = 0-15; and

d) 0-47.9 mole % of moieties of the general formula IVa and / or IV b:



IVa

IVb

wherein a, M, X and Y have the meanings defined above.

11. (New) A fluidising admixture according to claim 10, in which:

a) the moiety is according to formula Ia;

R^1, R^2 are independently H or CH_3 ;

$$X = O_a M, -O-(C_m H_{2m}O)_n-R^2$$

M = H or a mono- or divalent metal cation;

$$a = 1;$$

$$Y = O, NR^2;$$

$m=2-3$; and

n= 20-150;

b) R^2, R^3 are independently H or CH_3 ; and

$p = 0.1$; and

c) the moiety is according to formula IIIa;

$S = H, -COO_aM, -COOR^5$

$$T = U^1 - (CH_2 - CH_2 - O)_x - (CH_2 - CH_2 O)_y R^6$$

$$-\text{CO}-[\text{NH}-(\text{CH}_2)_3]_s-\text{W}-\text{R}^7$$

$$-\text{CO-O-(CH}_2\text{)}_z\text{-W-R}^7$$

R^4, R^5 are independently H, CH_3 ;

$$R^6 = R^2, -CH_2-CH(U^2-C=CH)-R^4$$

$$R^7 = R^2, -[(CH_2)_3-NH]_s-CO-C(=CH)R^4S$$

$$-(\text{CH}_2)_z-\text{O}-\text{CO}-\text{C}=\text{CH}$$

$\begin{array}{c} | \\ \text{R}^4 \\ | \\ \text{S} \end{array}$

wherein

$$U^1 = -CO-NH-, -O-, -CH_2O-$$

$U^2 = -\text{NH-CO-}, -\text{O-}, -\text{OCH}_2-$

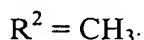
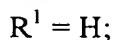
x = 20-50;

y = 1-10; and

$z = 0.2$.

12. (New) A fluidising admixture according to claim 11, in which:

a) the moiety is according to formula Ia;



M = a mono- or divalent metal cation;



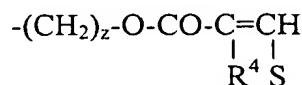
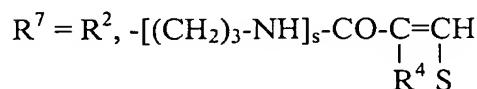
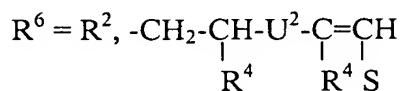
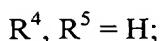
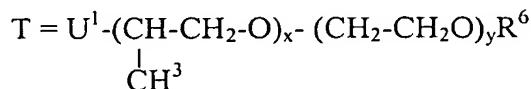
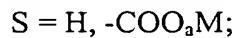
m = 2; and

n = 25-50;

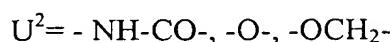
b) $R^2, R^3 = H$; and

p = 0; and

c) the moiety is according to formula IIIa;



wherein



x = 20-50;

y = 5-10; and

z = 1-2.

13. (New) A method of imparting flow to a cementitious composition, comprising the addition thereto of the admixture of claim 10.

14. (New) A method of spraying a cementitious composition comprising preparing a cementitious mix and conveying the mix to a spray nozzle, there being added to the mix at preparation the admixture of claim 10.
15. (New) The admixture of claim 10 wherein the polymer has a weight-average molecular weight of from about 5,000 to about 50,000.
16. (New) The admixture of claim 10 wherein the polymer has a weight-average molecular weight of from about 10,000 to about 40,000.
17. (New) The admixture of claim 10 wherein the proportions of the solids of the three components are:
Component 1 - about 1% to about 40%;
Component 2 - 0 to about 40%; and
Component 3 - about 5% to about 60%.
18. (New) The method of claim 13 wherein the admixture is added at a rate of from about 0.2% to about 2% by weight solids of cement.